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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/675,539	09/30/2003	Mark Maney	03RE076/YOD REEL:0046	5965

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EXAMINER	
TAMAI, KARL I	

ART UNIT	PAPER NUMBER
2834	

DATE MAILED: 01/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/675,539	Applicant(s) MANEY ET AL.	
	Examiner Tamai I.E. Karl	Art Unit 2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 November 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,5-7,10-13,17-19,22-24,27-32,34 and 37-46* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,5-7,10-13,17-19,22-24,27-32,34 and 37-46* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 November 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The amended title, "VENTILATED STATOR CORE AND LAMINATION AND METHOD OF COOLING SAME", of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The examiner suggests "VENTILATED STATOR CORE AND LAMINATIONS HAVING CANTILEVERED FINS IN COOLING DUCTS".

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1, 5, 6, 13, 17-19, 22-24, 27-32, and 37-44 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. The specification does not have a full, clear, concise, and exact written description of the cantilevered fins reducing the airflow through the corner ducts by 3 percent during operation of the motor of claim 1, approximately 3 percent of the air flows through the gap of claims 13 and 23, approximately 13 percent of the air flow is routed through the center ducts of claim 27, the center ducts are configured to reduce air flow in the corner

ducts by 12 percent of claim 38, the cooling ducts force approximately 10 percent of the air flow into the rotor cooling ducts of claim 39 and 44, and the corner ducts and center ducts force 13 percent of the airflow through the center ducts of claim 42 and 43.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 13, 17, 18, and 39-42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 13 is vague and indefinite because it is unclear whether "the cooling ducts" (line 17) referes to the stator cooling ducts, the rotor cooling ducts, or both.

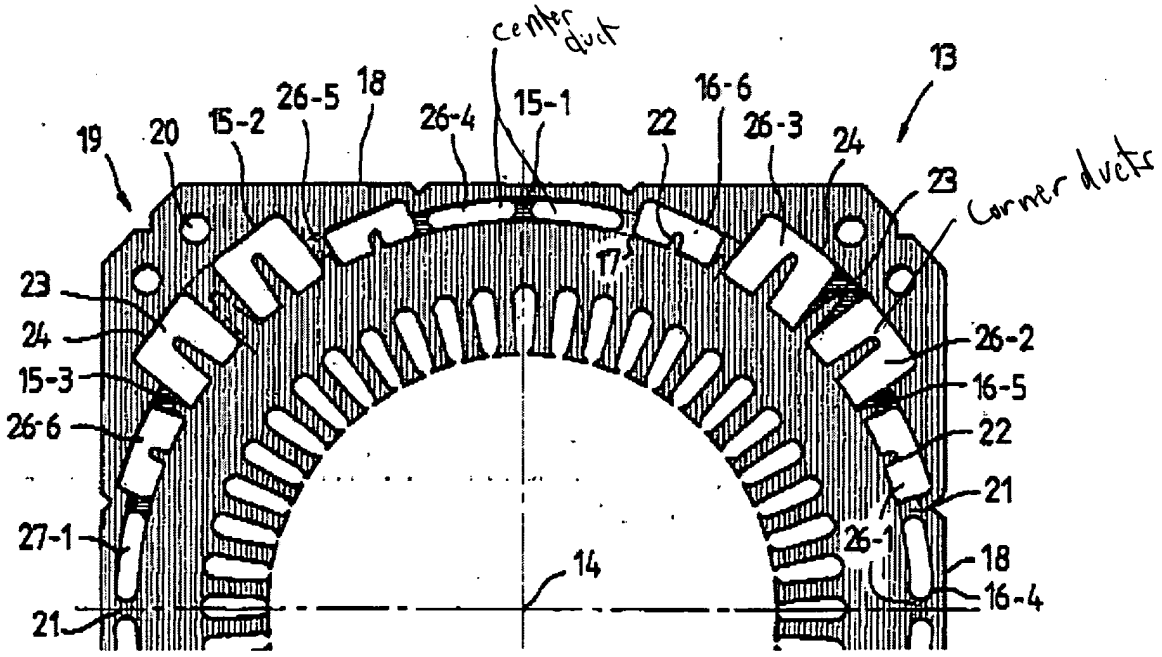
6. The rejection of Claim 28, 31, and 32 under 35 U.S.C. 112, second paragraph, is withdrawn. as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

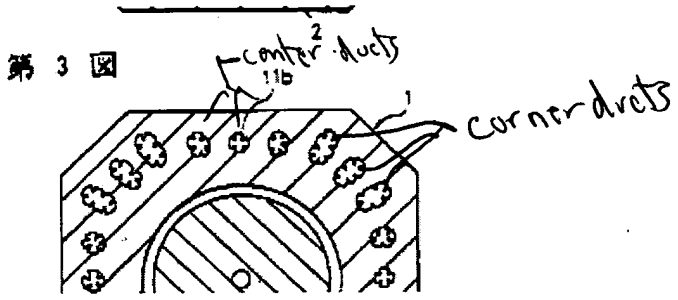
> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 7, 10-12, and 34 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Gutjahr et al. (Gutjahr)(DE 199 17 409). Gutjahr teaches a laminated stator with a central aperture for the rotor and a plurality of slots. The outer periphery defining a square with chamfered corners. The lamination having a plurality of corner ducts 23 in each of the corners with a cantilevered fins 22 and a plurality of center ducts 27 centered (having a major axis) around the vertical and horizontal axis to cool the laminations. It is inherent that the corner and center ducts are configured to force air into the center ducts. Gutjahr shows the fins equally spaced to balance the airflow and cool the lamination. Gutjahr shows channels 4 in the rotor 4 for cooling air flow 28.



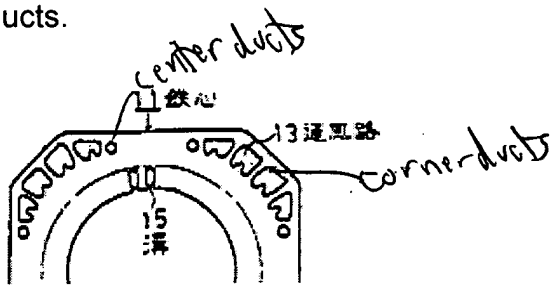
9. Claims 7, 10-12, and 34 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Koyama et al. (Koyama)(JP 57-129,139). Koyama teaches a laminated stator with a central aperture for the rotor and a plurality of slots for the winding 3. The winding extending from the side of the core such that they are inherently in slots. The

outer periphery defining a square with chamfered corners. The lamination having a plurality of mirrored corner ducts in each of the corners with a cantilevered fins/projections and a plurality of mirrored center ducts to cool the laminations. The center ducts are centered (having a major axis) around the vertical and horizontal axis to cool the laminations. It is inherent that the corner and center ducts are configured to force air into the center ducts. The drawings show the cooling projections equally spaced around the passages 11b to balance the air flow in the ducts.

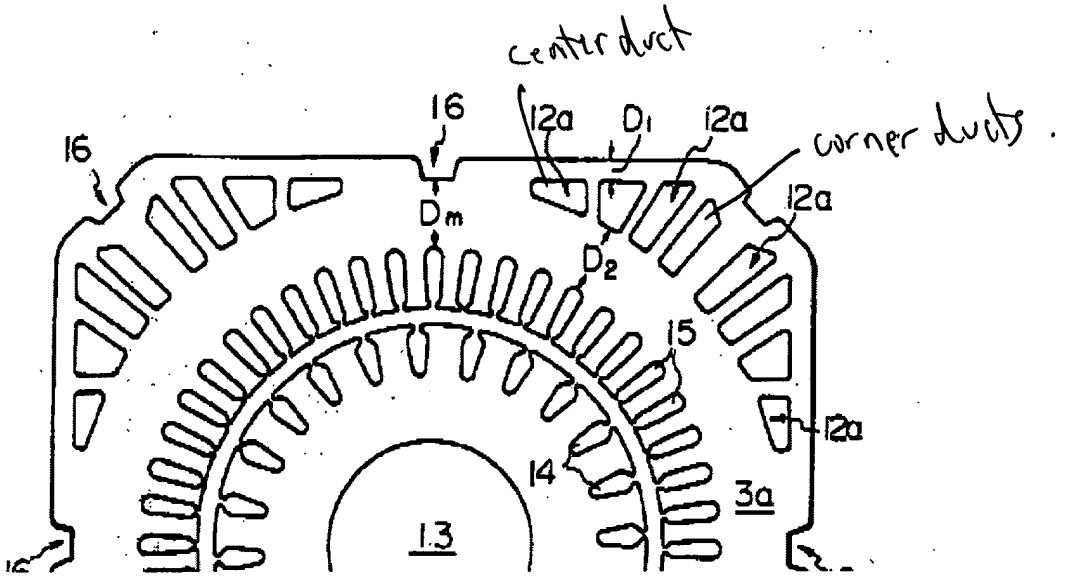


10. Claims 7, 10-12, and 34 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Furukawa et al. (Furukawa)(JP 03-049542). Furukawa teaches a laminated stator core 11 with a central aperture for the rotor and a plurality of slots 15 for the winding. The outer periphery defining a square with chamfered corners. The laminations (figure 1) having a plurality of mirrored corner ducts in each of the corners with a cantilevered fins/projections and a plurality of mirrored center ducts to cool the laminations. The examiner notes that the drawings do not label the circular openings adjacent the air passages 13, but the drawings can be used for what they reasonably convey to a person of ordinary skill in the art (*In re Aslanian*, 590 f.2d 911, 200 UPSQ 500 CCPA (1979)). The center ducts are centered (having a major axis) around the vertical and horizontal axis to cool the laminations. It is inherent that the corner and

center ducts are configured to force air into the center ducts. The drawings show the cooling projections equally spaced around the passages 11b to balance the air flow in the ducts.



11. Claims 7, 10, and 12 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Harano et al. (Harano)(US 4406959). Harano teaches a laminated stator core 3 with a central aperture for the rotor and a plurality of slots 15 for the winding. The outer periphery defining a square with chamfered corners. The laminations (figure 2) having a plurality of mirrored corner ducts in each of the corners with a cooling fins and a plurality of mirrored center ducts to cool the laminations. The center ducts are centered (having a major axis) around the vertical and horizontal axis to cool the laminations. It is inherent that the corner and center ducts are configured to force air into the center ducts.



Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

14. Claim 1, 5, 6, 13, 17-19, 22-24, 27, 28, 32, 37, 38, 39, 42, 43, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furukawa et al., Koyama et al., or Gutjahr et al., in further view of Inaba et al. (Inaba)(US 4592703). Furukawa, Koyama, and Gutjahr teach every aspect of the invention, as set forth above, except the cantilevered fins configured to reduce the airflow through the corner ducts by 3% in the motor during by 3% during motor operation or the center ducts reducing the air flow through the corner ducts by 12% or 13%, or the rotor including a cooling ducts where the air gap air flow is reduced by three percent, or 13% of the airflow is routed through the center ducts, or 10% routed through the rotor cooling ducts. Inaba teaches that controlling the size and amount of gas flow paths in the motor flow path can be used reduce the operating temperature of the motor during operation (col. 4, lines 54-60), thus they are result effective variables. Inaba does not teach the cantilevered fins configured to reduce the airflow through the corner ducts by 3% in the motor during by 3% during motor operation or the center ducts reducing the air flow through the corner ducts by 12% or 13%, or the rotor including a cooling ducts where the air gap air flow is reduced by three percent, or 13% of the airflow is routed through the center ducts, or 10% routed through the rotor cooling ducts. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the motor of Furukawa, Koyama, and Gutjahr with the cantilevered fins configured to reduce the airflow through the corner ducts by 3% in the motor during by 3% during motor operation or the center ducts reducing the air flow through the corner ducts by 12% or 13%, or the rotor including a cooling ducts where the air gap air flow is reduced by three percent, or 13%

of the airflow is routed through the center ducts, or 10% routed through the rotor cooling ducts because Inaba teaches that controlling the sized and mount of air through the motor can be used to reduce the operating temperature, and because it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (see *In re Aller*, 105 USPQ 233).

15. Claims 40, 41, 45, and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furukawa et al., Koyama et al., or Gutjahr et al., in further view of Inaba et al. (Inaba)(US 4592703). Furukawa, Koyama, Gutjahr, and Inaba teach every aspect of the invention, as discussed above, except the motor has an average operating temperature of approximately 117C and a maximum operation temperature of 169C when operating at 24kW with an aggregate air flow through the stator cooling ducts, the rotor cooling ducts, and the gap of approximately 2000 cubic feet per minute. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the motor of Furukawa, Koyama, Gutjah, and Inaba with the motor has an average operating temperature of approximately 117C and a maximum operation temperature of 169C when operating at 24kW with an aggregate air flow through the stator cooling ducts, the rotor cooling ducts, and the gap of approximately 2000 cubic feet per minute because Inaba teaches the use of motor temperature and airflow rate to provide an efficient operation of the motor.

16. Claims 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furukawa et al., Koyama et al., or Gutjahr et al., in further view of Inaba and Jarczynski et al. (Jarczynski)(US 5633543). Furukawa et al., Koyama et al., or Gutjahr et al. in further view of Inaba teach every aspect of the invention except the ducts configured to balance the flow air stator ducts. Jarzczynski teaches the stator ducts should be spaced to provide a balanced airflow and uniform temperatures. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the motor of Furukawa, Koyama, or Gutjahr and Inaba with the stator ducts balanced to provide uniform temperatures and cooling flows, as taught by Jarzcynski.

Response to Arguments

17. Applicant's arguments with respect to the pending claims have been considered but are moot in view of the new grounds of rejection.

Conclusion

18. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl I.E. Tamai whose telephone number is (571) 272 - 2036.

The examiner can be normally contacted on Monday through Friday from 8:00 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Darren Schuberg, can be reached at (571) 272 - 2044. The facsimile number for the Group is (703) 872 - 9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Karl I Tamai
PRIMARY PATENT EXAMINER
January 13, 2006

KARL TAMAI
PRIMARY EXAMINER

OK to Draft
1/13/06

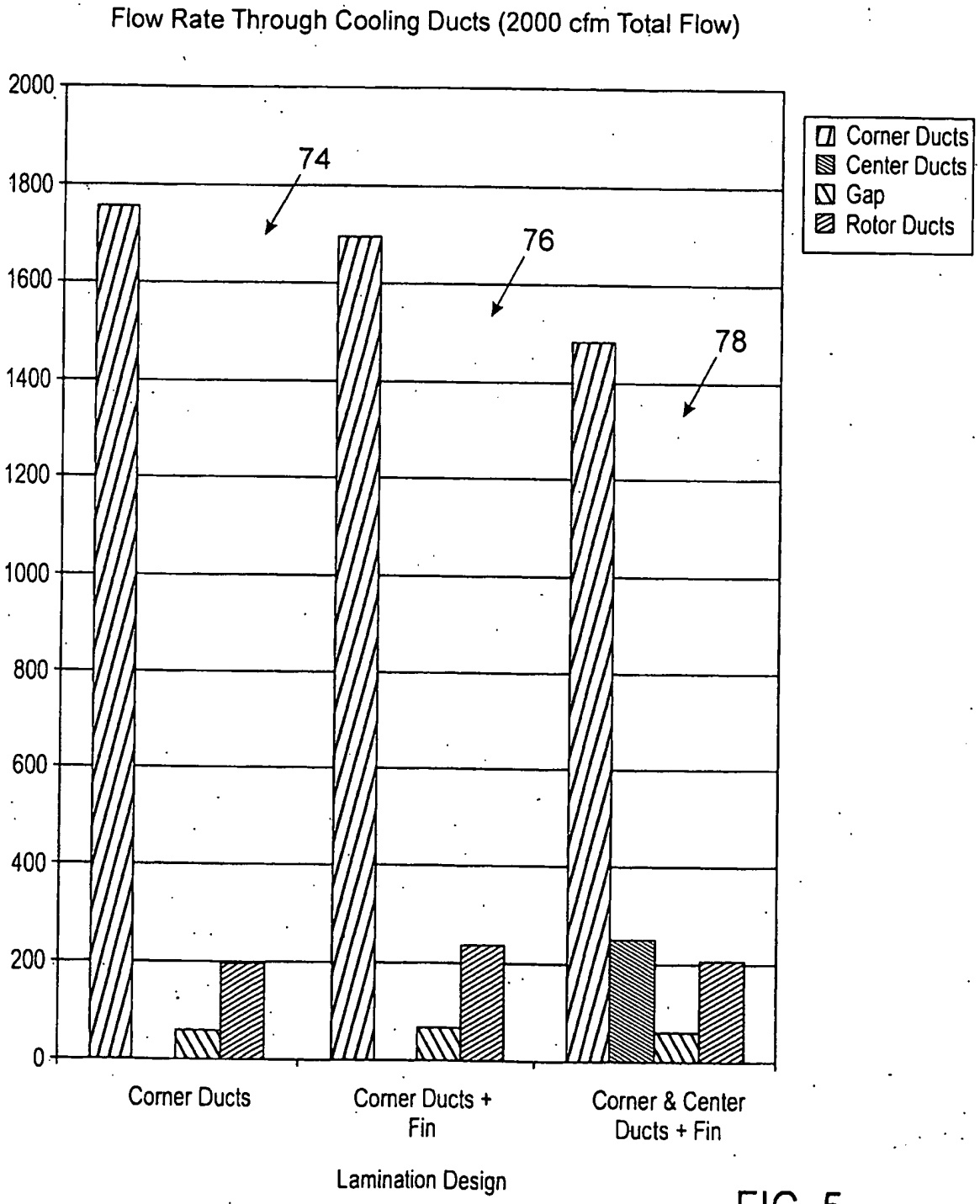


FIG. 5